

WHAT IS CLAIMED IS:

*Subt B'* 5  
1. A semiconductor device comprising:  
a semiconductor element having a plurality  
of electrodes;

10 electrodes of the semiconductor device to electrode  
pads located in predetermined positions of the  
redistribution layer;

15 a plurality of metal posts formed on the  
electrode pads of the redistribution layer, the  
metal posts being configured to be provided with  
external connection electrodes;

20 at least one mark member which serves as  
an alignment mark located in a predetermined  
positional relationship with the metal posts,  
wherein the mark member is made of the  
same material as the metal posts.

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2. The semiconductor device as claimed in  
claim 1, wherein the alignment mark has an outer  
configuration other than a circle.

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3. The semiconductor device as claimed in  
claim 1, wherein a width of the alignment mark  
measured along a plane parallel to a surface of the  
redistribution layer is greater than a height of the  
metal posts.

4. A semiconductor device comprising:  
a semiconductor element having a plurality  
of electrodes;

5       a redistribution layer which connects the  
electrodes of the semiconductor device to electrode  
pads located in predetermined positions of the  
redistribution layer; and

10       at least one mark member which serves as  
an alignment mark located in a predetermined  
positional relationship with the electrode pads,

15       wherein the mark member is made of the  
same material with the electrode pads.

20       5. The semiconductor device as claimed in  
claim 4, wherein the alignment mark has an outer  
configuration other than a circle.

25       6. A method of testing a semiconductor  
device, comprising the steps of:

30       forming a redistribution layer on the  
semiconductor device in a wafer state;

35       forming metal posts on the redistribution  
layer;

40       forming a mark member in a predetermined  
position on the redistribution layer with respect to  
the metal posts, the mark member serving as an  
alignment mark; and

45       performing a semiconductor test while  
determining positions of electrodes of the  
semiconductor device by recognizing the alignment  
mark.

7. The method as claimed in claim 6,  
wherein the step of forming a mark member includes  
the step of forming at least two mark members on the  
redistribution layer in a periphery of the wafer.

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8. A method of testing a semiconductor  
device, comprising the steps of:

forming a redistribution layer on the  
semiconductor device in a wafer state; and

encapsulating the wafer with a seal resin  
while maintaining a periphery of the wafer unsealed,  
the periphery of the wafer corresponding to an area  
other than an area in which the semiconductor device  
is formed.

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9. The method as claimed in claim 8,  
further comprising the step of forming an alignment  
mark on the periphery of the wafer, the alignment  
mark being used for recognition of a position of the  
semiconductor device.

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10. A method of testing semiconductor  
devices, comprising the steps of:

forming a redistribution layer on the  
semiconductor devices in a wafer state;

35 forming a seal resin layer on the  
redistribution layer so as to encapsulate the  
semiconductor devices;

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forming grooves in the seal resin layer along scribe lines, the grooves extending through the seal resin layer so that a bottom of each of the grooves reaches the wafer;

5 performing a test on the semiconductor devices in the wafer state while recognizing the wafer exposed on the bottom of the groove as a reference position; and

10 separating the wafer into individual semiconductor devices by cutting the wafer along the scribe lines.

15 11. The method as claimed in claim 10, wherein the step of forming grooves includes the step of forming grooves along predetermined scribe lines selected from all of the scribe lines provided  
20 for the wafer.

25 12. A method of fixing a wafer onto a vacuum chuck table by suction, comprising the steps of:

30 suctioning a portion of the wafer having a minimum warp so that the portion of the wafer is fixed onto the vacuum chuck table;

35 suctioning a portion of the wafer adjacent to the suctioned portion of the wafer so that the portion of the wafer adjacent to the suctioned portion is fixed onto the vacuum chuck table; and

35 sequentially repeating the suctioning step until an entire wafer is fixed onto the vacuum chuck table by suction.

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13. An apparatus for fixing a semiconductor wafer by suction, comprising:  
a vacuum chuck table having a plurality of concentric suction grooves; and  
5 suction passages connected to the suction grooves, the suction grooves being grouped into a plurality of groups so that each of the suction passages is connected to the suction grooves included in a corresponding one of the groups,  
10 wherein a suctioning force is sequentially introduced into the suction passages at different timing.

15 Add C1  
20 Add D4

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